Tiscia (Szeged) Vol. XIX, pp. 205—210 (1984)

SPECTROGRAM ANALYSIS OF DIFFERENT CALLS AT THE HERONRY OF LABODÁR

MÁRIA WOLLEMANN

Biological Research Center Hungarian Academy of Sciences Szeged

Abstract

The gargling call of night herons which is audible only during the nesting period in the heronry of Labodár was identified as an "advertising" call and was differentiated by sonogramms from other bird calls occuring in the heronry.

Introduction

In the last six years I investigated the different calls of night herons *(Nycticorax nycticorax)* grey herons *(Ardea cinerea)* and little egret's *(Egretta garzetta)* at the heronry of Labodár, which is situated 55 km-s north from Szeged on a dead arm of the Tisza river.

The results of the first two years were published in a previous paper (WOLLEMANN 1980). In this paper a special nesting call of the night heron was described, which can be imitated as "wawawa" or "lalala".

According to NIETHAMMER (1966) and STEINFATT (1934) the call is a greeting call of the bird arriving at the nest which follows after "guok guok" or "guark guark" and expresses tenderness accompanied by mutual preening. In our cases we were not able to observe the pair greeting function of this call. We classified it rather as an "advertisement" or "parade" call similar to that described by VOISIN (1979) and CHAPPUIS (1979) in the little egret as a long gargling advertising call used by the males to attract females. Noble et als (1938) attributed a "snap-hiss" ceremony to the lonely standing male black-crowned night heron *(Nycticorax nycticorax hoactli)* attracting females which corresponds to the function of the gargling call we observed in night herons. In addition they described also an "overture and display" behaviour accompanied with mutual guttural greeting calls by males and females, which is not further detailed. One other call is described as recognition call "krwawrk-krwawrk-krwawrk", which helps the retention of the group.

The main purpose of our recent investigations was therefore to establish whether the gargling night heron call is a pair greeting or an advertising pair forming call.

Methods

Night heron calls were recorded at the heronry from April till June (1978—1983). A Grundig C 200 automatic tape recorder was used at 19 cm/min speed with a cardioide dynamic microphone cable transformator Type MKT—1H, AEG.

A Sound Spectrograph Series 700 model (voice identification Inc.) was used to prepare spectrograms with a frequency response of 85—8000 Hz as described previously (WOLLEMANN and OLASZY 1977). One spectrogram displayed 2.4 sed of sound.

Results

In order to distinguish between the different bird calls I collected samples not only from the previously published "lalala" night heron (Fig. 1) call (WOLLEMANN 1980) but beside other night heron calls "guok" (Fig. 2) and "guark" (Fig. 2) adult grey heron call frarnk (Fig. 3) and young grey heron calls (kak kak) (Fig. 4) and little egret call (kark) (Fig. 5) were also recorded and analysed. No gargling call of little egrets was observed probably owing to the small number of pairs (3—14) in the colony, whereas night herons and grey herons were present in a consistently large number (30—68 pairs resp. 20—30 pairs).

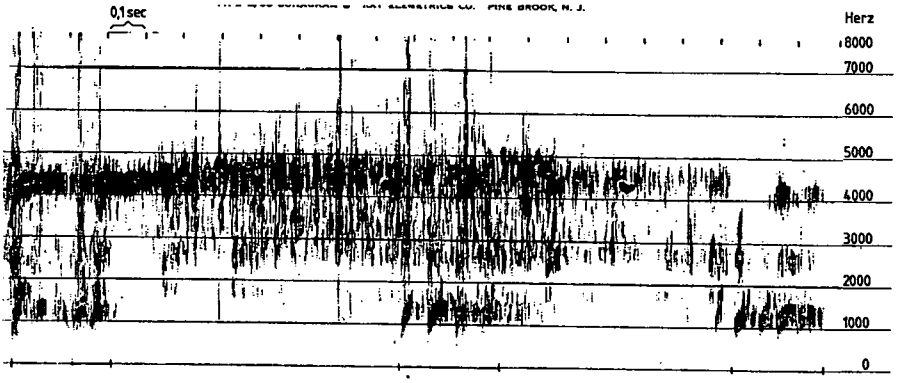

Fig. 1. "lalala" call of night heron: |——|. The recordings over 2000 Herz are background voices 1

The frequency of the night heron advertising call "lalala" was as previously described between 500—1500 Herz and was repeated four times within 0.4 sec with an average of 4—5/min during one hour observation time. The distribution of the calls was clusterlike, one call induced frequently an other bird's call. In the observed cases the single birds were usually standing on a tree branch, some times over a nest and night herons standing also alone on other branches started to call after a while too. Some of the birds, sitting already on nests did not answer. As the night heron

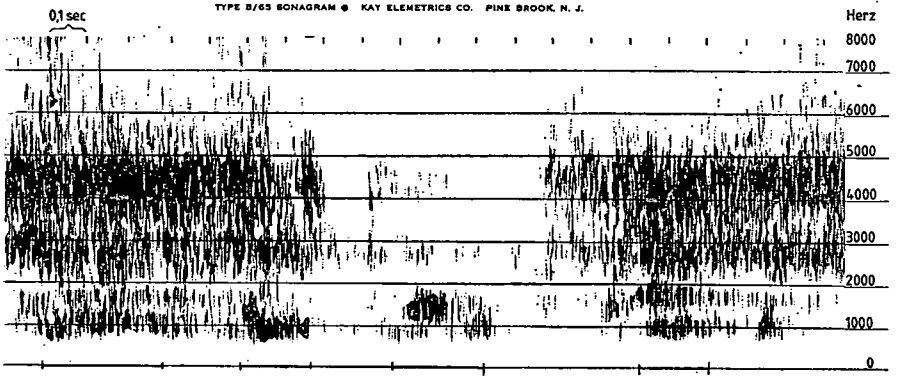

Fig. 2. "quok" |——| and guark: |—| call of night heron.

males and females are alike it is not possible to tell something about the sex of the calling bird from their appearance. The advertising call was not used by the night herons flying into the heronry as a greeting call and could be easily differentiated in the sonogram from other night heron (Fig. 2), grey heron (Fig. 3—4) and little egret (Fig. 5) calls.

In table I we summarized the occurrence of the night heron advertising call (Table 1).

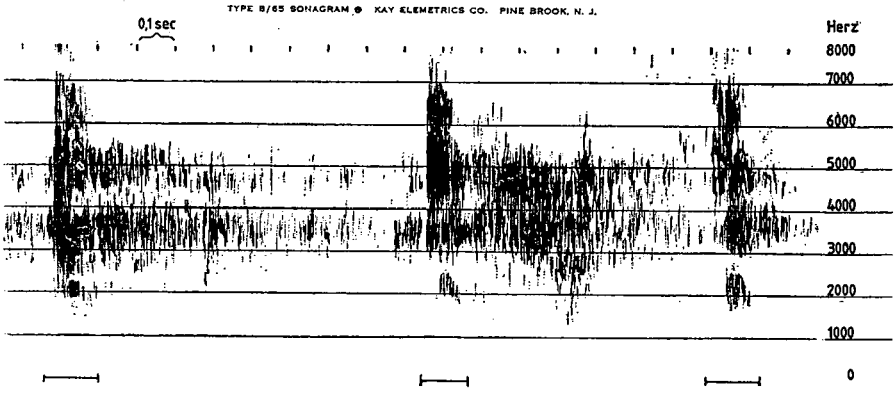

Fig. 3. "frarnk" calls of grey heron: |——| .

Table 1. *Data concerning the occurrence of night heron advertising calls from 1978 to 1983.*

	1978	1979	1980	1981	1982	1983
3. 11.		—				
3. 25.		—				
3. 31.		—				
4. 2.	—					
4. 4.			—			
4. 15.		+				
4. 22.	+	++				
4. 29.	++					—
4. 30.		++				
5. 4.			–			
5. 5.		++				
5. 13.		+				
5. 15.	–N					++
5. 20.		+				
5. 28.	–N					
5. 31.				++		
6. 4.	++N					
6. 6.		–N			—	—
6. 10.	+					
6. 17.	+N					
6. 19.						–N
6. 24.	–N	–N				

+ = call present
— = call absent
N = Nestling calls

Discussion

Analysing the data of STEINFATT (1934) his earliest observation days on the Little Balaton were as follows: June 5 (1931), June 1 (1932), May 8 (1933). He mentions also that around the middle of May there are young night herons almost on every place. At his observation place they were 25 pairs of night herons, 4 pairs of grey herons, 4 pairs of squacco herons and 4 pairs of glossy ibis. There were no little egrets, so their voice could not interfere with night herons.

My earliest observations of the "lalala" night heron call were on April 16 (1979) and latest on June (1978) after which no calls could be observed, although the later was a result of a second breeding periods (Table I). The call's advertising function was established by direct visual observations. No nest greating ceremony was observed, in contrary gargling calls were observed only from lonely night herons. The late occurrence of the call in 1978 (first decade of June) was probably connected with the nest robberies of grey hooded crows, since many eggshells were found on the dike (WOLLEMANN 1980).

We conclude therefore that the "lalala" call is identical in function with the "advertisement" or "parade" call of the little egret which is described by VOISIN (1979) as follows below "Donc, ..." (p. 411). The physical parameters of the two

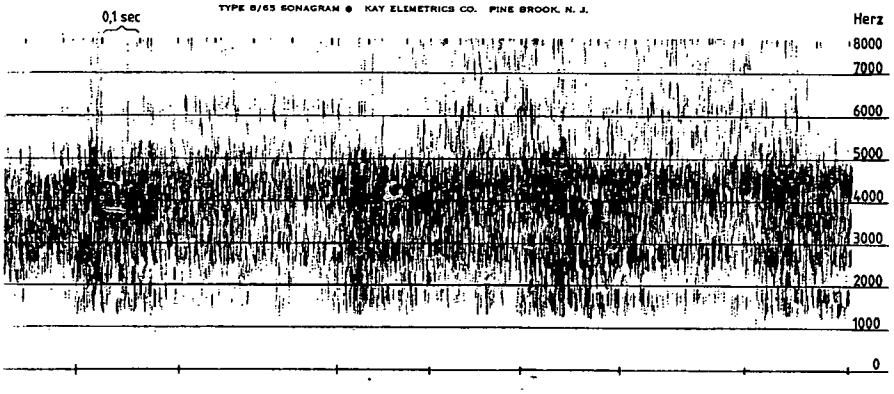

Fig. 4. "kak" calls of young night herons in colony: |——|.

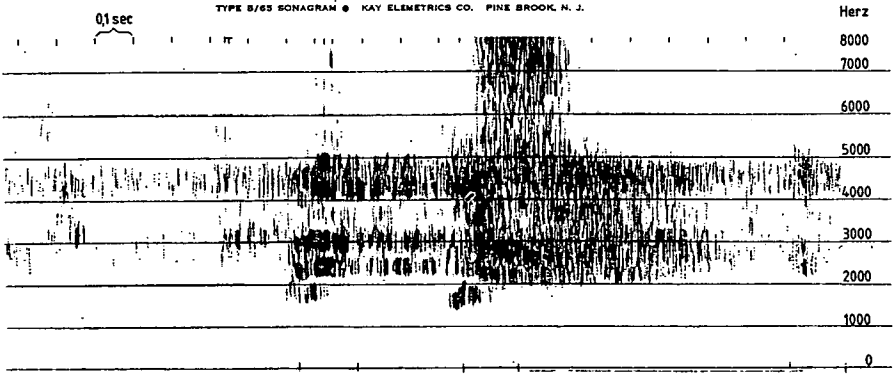

Fig. 5. "kark" calls of little egret in colony: |——|.

calls are also similar: one parade call is repeated 4—6 times during 0.4 sec. in the little egret compared with 3—4 times during 0.4 sec in the night heron. The main difference is reflected in the frequency: the former call is between 500—6000 Herz, whereas the later between 500—1500 Herz.

References

CHAPPUIS, C. (1979: Personal communication.

WOLLEMANN, M. (1980): Spectrogram analysis of the night heron *(Nycticorax nycticorax* L.*)* Calls at the heronry of Labodár. Tiscia (Szeged) *15*, 131—137.

WOLLEMANN, M. and OLASZY, G. (1976): Spectrogram Analysis of different Alarm Calls in Gulls and Waders. — Agressologie *18*, 97—102.

NIETHAMMER G. (1966): Handbuch der Vögel Mitteleuropas Bearb. Kurt M. Bauer und Glutz von Blotzhenn Band I., — Frankf. am Main.

NOBLE, G. K., WURM, M. and SCHMIDT, A. (1938): Social behavior of the Black-crowned Night Heron. Auk *55*, 7—40.

VOISIN, C.: (1979): Etude du comportement de l'aigrette garsette (egretta garzetta) en période de reproduction. — L'oiseau et RFO *46*, 387—425, et *47*, 65—103.

A labodári gémtelep különböző hangjainak spektrogram analízise

WOLLEMANN MÁRIA

Magyar Tudományos Akadémia, Szegedi Biológiai Központ, Biokémiai Intézet

Kivonat

A régebbi kutatásaimhoz képest megállapítottam, hogy bakcsónál a csak fészkelési időben hallható „LALALA" hangok ellentétben az irodalommal, az általam észlelt valamennyi esetben parádé vagy hirdetési (advertisement-call) hang jellegűek és nem párköszöntőek.

Ugyanakkor a telepen előforduló más madaraktól ilyen hangot nem észleltem, amit szonogram felvételekkel alátámasztottam.

Спектрограммный анализ различных звуков, издаваемых Биохимический журавлями в колонии в Лабодаре

Мария Воллемани

Биологический Институт Сегедского биологического Центра при Академии Наук ВНР

Резюме

В отличие от своих прежних исследований, установила, что в противоположность литературным данным, издаваемые кваквой только в период закладки гнёзд звуки «ЛАЛАЛА» во всех наблюдаемых мною случаях носили парадный или «информационный» (advertisement-call) характер, а не характер приветствия супружеской пары.

В то же время другие живущие в колонии птицы подобных звуков не издавали, что подтверждается сонограммными записями.

* Donc á ce stade de recherche de partenaire, l'oiseau emploie ce cri „gargarisé": 1) lorsqu'i parade, en alternance avec la posture d'appel; 2) entre les périodes de parades un rien suffit a provoquer ce cri de facon plus ou moins sonore.

STEINFATT, O.: (1934) Ein Beitrag zur Kenntnis der Naturgeschichte, insbesondere des Brutlebens des Nachtreihers. — Beitr. Fortpfl. Biol. *10*, 85—96.

Spektrogramska analiza glasovnih efekata kolonije čaplji Labodár-a

WOLLEMANN MÁRIA

Biohemijski institut Centra za biologiju Madjarske akademije nauka, Szeged

Abstrakt

U odnosu na naša ranija istraživanja utvrdili smo, da se kod gaka oglašavanje sa „LALALA" javlja samo u doba gneždjenja. Suprotno literaturnim podacima, ono ne predstavlja dozivanje parova, već je u svim slučajevima našeg osmatranja paradnog značenja (advertisement-call).

Sonogramski snimci potvrdajuju da za ostale ptice kolonije ovo oglašavanje nije utvrdjeno.

Sonogramska ispitivanja oglašavanja ptica u koloniji čaplji Labodár

WOLLEMANN MÁRIA

Biološki institut Madjarske akademije nauka, Szeged

Abstrakt

Ispitivano je oglašavanje gaka *(Nycticorax nycticorax)* sonogramom (usporeni magnetofonski snimak), i to oni glasovni efekti koji se javljaju samo u doba gneždjenja. Smatramo da je ovo oglašavanje signalnog ili „paradnog" karaktera. Ovi glasovni efekti gaka jasno se izdvajaju na snimku, od oglašavanja drugih ptica.